

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
25 August 2005 (25.08.2005)

PCT

(10) International Publication Number
WO 2005/078246 A1

(51) International Patent Classification⁷: **F01L 13/00**

(21) International Application Number: **PCT/JP2005/002966**

(22) International Filing Date: 17 February 2005 (17.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 2004-040248 17 February 2004 (17.02.2004) JP

(71) Applicant (for all designated States except US): **HONDA MOTOR CO., LTD.** [JP/JP]; 1-1, Minami-Aoyama 2-chome, Minato-ku, Tokyo 1078556 (JP).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **TASHIRO, Masahiko** [JP/JP]; c/o Honda R & D Co., Ltd., 4-1, Chuo 1-chome, Wako-shi, Saitama 3510193 (JP).

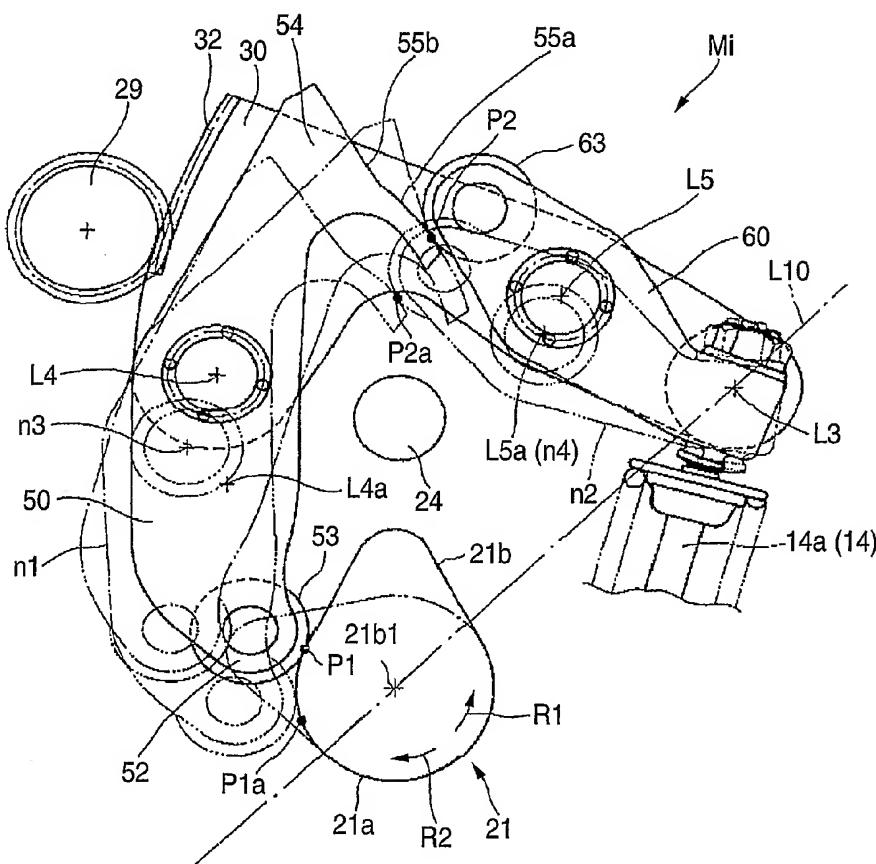
(74) Agents: **OGURI, Shohei** et al.; Eikoh Patent Office, 13th Floor, ARK Mori Building, 12-32, Akasaka 1-chome, Minato-ku, Tokyo 1076013 (JP).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,

[Continued on next page]

(54) Title: VALVE TRAIN FOR INTERNAL COMBUSTION ENGINE



(57) Abstract: A valve train includes a primary rocker arm 50 which is oscillated about a primary oscillating center line L4 by an inlet cam 21, a secondary rocker arm 60 which transmits a valve drive force F1 to an inlet valve 14 and oscillates about a secondary oscillating center line L5, and a holder 30 which supports the primary and secondary rocker arms 50, 60 in such a manner that the primary and secondary oscillating center lines L4, L5 rotate together therewith. As the holder 30 approaches an oscillating position where a valve operating property is obtained where a maximum lift amount becomes maximum, an abutment position P1 where a cam lobe portion 21b abuts with a roller 53 of the primary rocker arm 50 approaches a specific straight line L10 which passes through a holder oscillating center line L3 and a rotational center line L2 of the inlet cam 21.



SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*